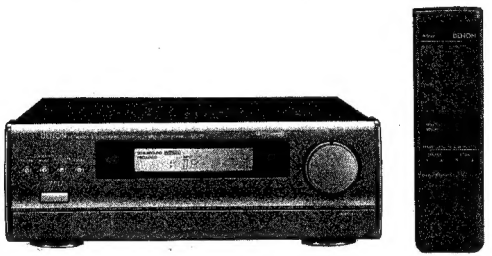
DENON

Hi-Fi AV Surround Amplifier

MODEL AVC-77

AV SURROUND AMPLIFIER



NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

• **Audio section**	
Rated maximum output	CENTER (Center 1ch driven)
(All properties shown are	30 W (8 Ω/ohms, 1 kHz with 1.0% THD)
only for the power	REAR (rear 2ch driven)
amplifier stage.)	15 W + 15 W (8 Ω/ohms, 1 kHz with 1.0% THD)
Frequency response	40 Hz to 20 kHz ±3 dB
Rated input/input impedance	150 mV/47 kΩ/ohms
S/N ratio	90 dB
Speaker impedance	Center: 8 Ω/ohms
	Rear: 8 Ω/ohms
LINE Input sensitivity/impedance	150 mV/47 kΩ/ohms
• **Video section**	
Input and output level/impedance	1 Vp-p/75 Ω/ohms
Frequency response	2 Hz to 8 MHz +0, −3 dB
• **General**	
Power source	AC 230 V, 50 Hz
Power consumption	135 W
Maximum external dimensions	270 (W) × 96 (H) × 313 (D) mm
	(10-5/8" × 3-25/32" × 12-21/64")
Weight	4.7 kg (10 lbs 6 oz)
• **Remote control unit (RC-178)**	
Remote control system	Infrared pulse
Number of buttons	15
Power supply	Two DC 1.5V R6P/AA batteries
Maximum external dimensions	48 (W) × 175 (H) × 18 (D) mm
	(1-57/64" × 6-57/64" × 45/64")
Weight	120g (including batteries) (Approx. 4 oz)

* Maximum dimensions include controls, jacks, and covers.
(W) = width, (H) = height, (D) = depth

* Specifications are subject to change without notice.

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1 INTRODUCTION / EINFÜHRUNG / INTRODUCTION

NOTE ON USE / HINWEISE ZUM GEBRAUCH / OBSERVATIONS RELATIVES A L'UTILISATION

- Avoid high temperatures
  Allow for sufficient heat dispersion when installed on a rack.
- Vermeiden Sie hohe Temperaturen
  Beachten Sie, daß eine ausreichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.
- Eviter des températures élevées
  Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.

- Handle the power cord carefully.
  Hold the plug when unplugging the cord.
- Gehen Sie vorsichtig mit dem Netzkabel um.
  Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.
- Manipuler le cordon d'alimentation avec précaution.
  Tenir la prise lors du débranchement du cordon.

- Keep the set free from moisture, water, and dust.
- Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.
- Protéger l'appareil contre l'humidité, l'eau et la poussière.

- Unplug the power cord when not using the set for long periods of time.
- Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Wandstecker.
- Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.

*(For sets with ventilation holes)

- Do not obstruct the ventilation holes.
- Die Belüftungsöffnungen dürfen nicht verdeckt werden.
- Ne pas obstruer les trous d'aération.

- Do not let foreign objects in the set.
- Keine fremden Gegenstände in das Gerät kommen lassen.
- Ne pas laisser des objets étrangers dans l'appareil.

- Do not let insecticides, benzene, and thinner come in contact with the set.
- Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.
- Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.

- Never disassemble or modify the set in any way.
- Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.
- Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.

SAFETY IMPORTANT

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

•NUR FÜR EUROPÄISCHE MODELLE

Konformitätserklärung

Die DENON Electronic GmbH
Halskestraße 32
40880 Ratingen

Erklärt als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Amtsblattverfügung 868/1989 (Amtsblatt des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

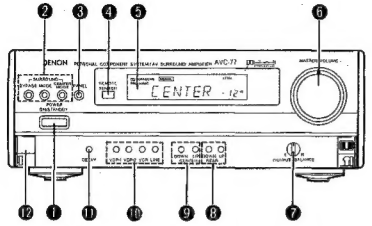
CAUTION / VORSICHT / ATTENTION

- If the system should smoke or produce strange smells, immediately set the power switch to the STANDBY position, unplug the power cord, and contact your store of purchase.
- Sollte das Gerät Rauch produzieren oder eigenartig riechen, stellen Sie den Netzschalter sofort auf die Position STANDBY (Bereitschaft), ziehen Sie den Netzstecker heraus und kontaktieren Sie Ihren Händler.
- Si de la fumée sort de la chaîne ou des odeurs bizarres, placer l'interrupteur d'alimentation immédiatement sur la position de veille (STANDBY), débrancher le cordon d'alimentation et contacter le distributeur.

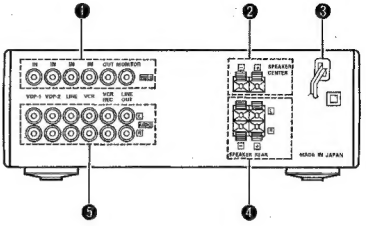
"SERIAL NO. _____
PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

2 NAMES OF PARTS/BEZEICHNUNG DER TEILE/NOMENCLATURE

(Front Panel/Frontplatte/Panneau avant)



(Rear Panel/Rückseite/Panneau arrière)



FOR ENGLISH READERS

1. POWER button
2. SURROUND select button
3. PANEL button
4. REMOTE CONTROL SENSOR
5. MFD (Multi-function display)
6. MASTER VOLUME control
7. OUTPUT BALANCE control
8. REAR channel level button
9. CENTER channel level button
10. FUNCTION button
11. DELAY TIME button
12. Trap door

FOR ENGLISH READERS

1. VIDEO INPUT/OUTPUT jacks
2. CENTER channel speaker terminals
3. AC cord with plug
4. REAR channel speaker terminal
5. AUDIO INPUT/OUTPUT jacks

FÜR DEUTSCHE LESER

1. POWER-Taste (Netz)
2. SURROUND-Wahltaste (Surround)
3. PANEL-Taste (Panel)
4. REMOTE CONTROL SENSOR (Fernbedienungssensor)
5. MFD (Multi-Funktions-Display)
6. MASTER VOLUME-Regler (Hauptlautstärke)
7. OUTPUT BALANCE-Regler (Ausgangsbalance)
8. REAR-Taste (Pegel für hinteren Kanal)
9. CENTER-Taste (Pegel für Mittelkanal)
10. FUNCTION-Taste (Funktion)
11. DELAY TIME-Taste (Verzögerungszeit)
12. Klappe

FÜR DEUTSCHE LESER

1. VIDEO INPUT/OUTPUT-Buchsen (Video-Eingang/Ausgang)
2. CENTER-Lautsprecherklemmen (für Mittellautsprecher)
3. AC-Kabel mit Stecker
4. REAR-Lautsprecherklemmen (für hinteren Lautsprecher)
5. AUDIO INPUT/OUTPUT-Buchsen (Audio-Eingang/Ausgang)

POUR LES LECTEURS FRANCAIS

1. Touche POWER (alimentation)
2. Touche de sélection SURROUND (ambiance)
3. Touche PANEL (panneau)
4. REMOTE CONTROL SENSOR (Détecteur de télécommande)
5. MFD (affichage multi-fonction)
6. Commande MASTER VOLUME (volume de la gamme entière)
7. Commande OUTPUT BALANCE (équilibre de sortie)
8. Touche REAR (niveau de canal arrière)
9. Touche CENTER (niveau de canal central)
10. Touche FUNCTION (fonction)
11. Touche DELAY TIME (temps de retard)
12. Trappe

POUR LES LECTEURS FRANCAIS

1. Prises VIDEO INPUT/OUTPUT (entrée/sortie vidéo)
2. Bornes d'enceinte CENTER (canal central)
3. Cordon secteur avec fiche
4. Borne d'enceinte REAR (canal arrière)
5. Prises AUDIO INPUT/OUTPUT (entrée/sortie audio)

- **Read this manual carefully to ensure that you take full advantage of all the features of this surround amplifier. Keep the manual in a safe place for future reference.**
- **Be sure to check that the date of purchase and the store's name of purchase have been filled in properly on the warranty issued at your store of purchase.**

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Check that the following parts are included in the package aside from the main unit:

① Operating Instructions 1
② Remote Controller (RC-178) 1
③ R6P/AA Batteries 2

3 BEFORE USING

Read the following cautions carefully before using the amplifier:

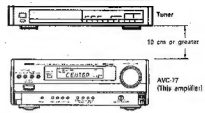
- Moving the set
  Be sure to unplug the power cord and disconnect other cords connecting the amplifier to other audio units before moving the amplifier to prevent damaging or short-circuiting the cords.
- Before turning on the power switch
  Check again to make sure that all connections are correct and that there are no problems with the connection cords. Be sure to turn the power STANDBY before disconnecting or connecting cords.
- Retain the operating instructions
  After reading this manual, store it in a safe place.
- The illustrations used in this manual may differ somewhat from the actual amplifier.

4 INSTALLATION PRECAUTIONS

Using this amplifier or other electronic equipment containing microprocessors simultaneously with a tuner or TV may result in noise in the sound or picture.
If this should happen, take the following steps:

- **Install the amplifier as far as possible from the tuner or TV set.**
- **Keep the antenna lines of the tuner or TV as far as possible from the amplifier's power cord and connection cables.**
- **This problem is especially frequent when using indoor antennas or 300 Ω/ohm feeder lines. We recommend using outdoor antennas and 75 Ω/ohm coaxial cables.**

A note on stacking



For cooling purposes, do not place another AV component directly on top of the amplifier. Be sure to leave a space of at least 10 cm.

5 HANDLING PRECAUTIONS

- **Switching the input function when the input jacks are unconnected**
  Switching the input function when a component is not connected to the input jacks may result in the generation of click noise. If this should happen, turn down the MASTER VOLUME or connect a component to the input jacks.
- **Playback with Dolby Pro Logic**
  The Dolby Pro Logic position provides optimum effectiveness for sources recorded with Dolby Surround. A different surround mode should be selected when playing back sources other than this type. Note in particular that when playing back monaural recording sources, the bypass mode or the simulated mode should be used. Other modes will not provide a suitable effect.
- **Muting of the LINE OUT jacks**
  An electronic muting circuit has been connected to the LINE OUT jacks. This circuit gently attenuates the output signal for approximately 8 seconds after the power has been switched on. Raising the volume during this operation will result in an extremely large output once the muting has ended, so volume adjustments should be made only after the completion of muting.
- **Rear output level while in the surround mode**
  The rear level will seem small for sources other than Dolby Surround sources. The reason for this is that a rear playback signal is not contained in the software. When playing back such software with a surround function, the mode should be set to something other than Dolby Pro Logic surround. The rear output level may seem small for software having a small rear signal, even Dolby Surround sources.
- **Opening and closing the door**
  This amplifier is equipped with a door on the front panel. Press the "PUSH OPEN" portion printed at the upper right edge of the door to release and open the door. Likewise, to close the door, press in the same manner until a click sound is heard.

NOTE:
The door will open naturally once it has been released, but it may stop before fully opening. This is not a fault; just lightly push the door open.

6 CONNECTIONS

Connecting video decks (VCR)

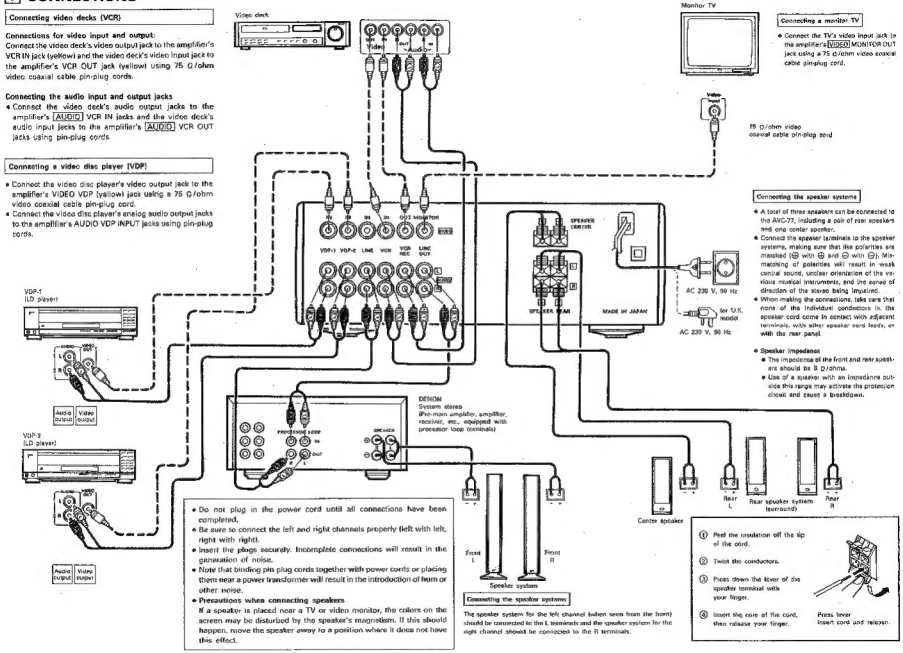
Connections for video input and output:
Connect the video deck's video output jack to the amplifier's VCR IN jack (yellow) and the video deck's video input jack to the amplifier's VCR OUT jack (yellow) using 75 Ω/ohm video coaxial cable pin-plug cords.

Connecting the audio input and output jacks

- Connect the video deck's audio output jacks to the amplifier's [AUDIO] VCR IN jacks and the video deck's audio input jacks to the amplifier's [AUDIO] VCR OUT jacks using pin-plug cords.

Connecting a video disc player (VDP)

- Connect the video disc player's video output jack to the amplifier's VIDEO VDP (yellow) jack using a 75 Ω/ohm video coaxial cable pin-plug cord.
- Connect the video disc player's analog audio output jacks to the amplifier's AUDIO VDP INPUT jacks using pin-plug cords.



7 DOLBY PRO LOGIC SURROUND

• Setting delay time

The optimum delay time depends on the listening position. Look at the diagram on the right and set the optimum delay time for the size of your room and your sitting position.

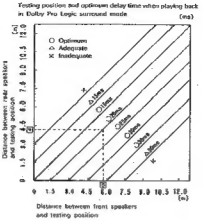
For example, if your listening position is 6 m away from the front speakers, and 4 m away from the rear speakers, the optimum delay time will be 20 msec.

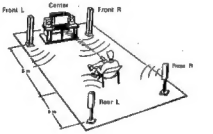
The variation range of the delay time differs from one mode to another.

For more information on the delay time variation range, see page 7.

• Adjusting the input balance

This amplifier is equipped with an auto input balance circuit, so there is no input balance adjustment knob.

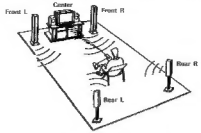




The ON/OFF and delay time setting for the speaker output (FRONT, REAR, CENTER), and the volume adjustment for the rear and center speakers can be set individually for each surround mode.

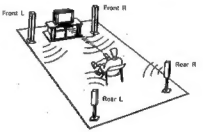
• Speaker placements in Dolby Pro Logic surround mode

When playing back music in Dolby Pro Logic surround, use of a center speaker will provide the best effect.



Normal mode

Normal mode: This is the best mode to use if the center channel is smaller than the speakers on the left and right. Signals of 100 Hz or below, which has almost no effect on orientation, are divided between the left and right channels, and the center channel outputs signals of 100 Hz or more, so the bass on the left and right channels is deeper.

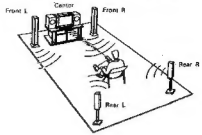


Phantom mode

Phantom mode: Phantom mode: This is the mode to use when the center channel playback speaker is not in use. The orientation emphasis circuit electronically positions the signal in the center during playback, so that you can enjoy an exciting sound field even without using the center speaker.

• Test tone

The test tone produces a test signal for adjusting the level in each channel in the Dolby Pro Logic surround mode. Before using Dolby Pro Logic surround, position the speakers as described above, find the ideal balance for the volume of each speaker using the test tone, and set the volume etc. so that they sound as if they are at the same level.



Wide mode

Wide mode: This is the best mode to use when the center channel speaker is of the same grade as the speakers on the right and left. The entire frequency band, from low regions to high, is output to the center channel playback speaker, giving an exciting sound field for your enjoyment.

In normal and wide mode, the test tone switches in the following order:

Front left → Center → Front right → Rear

Adjust the volume balance using this signal until the optimum balance is reached.

In phantom mode the switching is as follows:

Front left → Front right
Rear

Note that on this amplifier, the test tone is produced every 4 seconds after the first 2 seconds.

Use the remote control unit (RC-178) to make adjustments using the test tone.

8 PART NAMES AND FUNCTIONS

Front panel

❶ POWER switch

- **ON**
  When this switch is pressed once, the power turns on and "MUTING" flashes on the LCD ❷. (The muting circuit is activated while "MUTING" is flashing to prevent noise when the POWER switch is operated.) After several seconds the muting circuit turns off, the "MUTING" indicator turns off and the set is in the normal operating mode.
- **STANDBY**
  Press this switch once again to set the standby mode. "OFF" is displayed on the LCD.

❷ SURROUND buttons

Use these buttons to select the surround mode.

- **BYPASS button**
  When this button is pressed, the surround mode is bypassed and the normal stereo sound is produced.
  No signals are output to the rear channel.
- **MODE selector button**
  Press this button to select one of the surround modes shown below.
  Order of priority

① DD (Dolby) SURROUND PRO LOGIC
Use this mode for video software, etc., recorded in Dolby Surround.
Select the center mode according to the speaker system being used.
Set the delay time to between 15 msec and 30 msec, according to the size of the room and the position of the speakers.

② HALL surround
Use this to create the atmosphere of a hall.
The delay time can be set to between 5 msec and 30 msec.
No signals are output to the center channel.

③ SIMULATED
Use this to create a surround effect with monaural sources.
No signals are output to the center channel.
The delay time can be set to between 5 msec and 30 msec.

④ LIVE
Use this to create the atmosphere of a live program in a studio.
The delay time is set at 0 msec.

❸ PANEL button

When this button is pressed, the current settings are displayed on the LCD.
Use this button to switch the LCD display.
For details, refer to pages 7 to 9.

❹ REMOTE SENSOR

The remote control unit is pointed toward this sensor and operated.

❺ LCD (liquid crystal display)

The surround mode and input and output information is displayed here when the power is turned on. Normally one of the surround mode indicators is lit. If another button is pressed, a display pertaining to that button is shown for approximately 5 seconds, after which the surround mode is once again displayed.
Refer to page 8 for details on the LCD indicators.

❻ Master VOLUME control

Turn the control clockwise (↻) to increase the volume, counterclockwise (↺) to decrease it.

❼ OUTPUT BALANCE control

Use this to adjust the balance between the left and right outputs to create an effective surround sound.

❽ REAR speaker volume control buttons

Use these to adjust the volume of the rear (surround) speakers.

- **UP:** Press this to increase the volume.
- **DOWN:** Press this to decrease the volume.

The volume changes while one of the buttons is pressed, and stops changing when the button is released. The volume change is displayed on the LCD.
These buttons do not function when in the bypass mode.

❾ CENTER speaker volume control buttons

- **UP:** Press this to increase the volume.
- **DOWN:** Press this to decrease the volume.

The volume changes while one of the buttons is pressed, and stops changing when the button is released. The volume change is displayed on the LCD.
These buttons do not function when in the hall, live, simulated or Dolby Pro Logic phantom modes.

❿ Input selector buttons

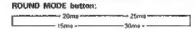
Use these buttons to select the input audio and video signals.

- **VDP-1:** Press this to use the VDP connected to the VDP-1 jacks.
- **VDP-2:** Press this to use the VDP connected to the VDP-2 jacks.
- **VCR:** Press this to use the video deck connected to the VCR jacks.
- **LINE:** Press this when a amplifier or receiver equipped with processor loop terminals is connected to select that component.

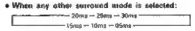
⓫ DELAY selector button

Press this button to switch the delay time, as shown below.

- **When Dolby Pro Logic is selected with the SURROUND MODE button:**



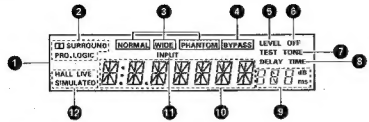
- **When any other surround mode is selected:**



⓬ TRAP DOOR

Press the right edge to open the door.
To close it, press on the right door. A click is heard to indicate that the door is closed.

Explanation of the LCD



❶ Multi-function display
The settings are displayed in order each time the PANEL button is pressed.
Normally the surround mode setting is displayed.

❷ SURROUND PRO LOGIC indicator
This is displayed when the Dolby Surround Pro Logic mode is selected with the SURROUND MODE button.

❸ NORMAL, PHANTOM and WIDE indicators
These light in the following order:

NORMAL → PHANTOM → WIDE

❹ BYPASS indicator
This lights when the surround circuit is bypassed by pressing the SURROUND BYPASS button.

❺ LEVEL indicator
This lights along with section ❾ when the REAR and CENTER UP and DOWN buttons are pressed. Adjust the level with the UP and DOWN buttons while watching the display in section ❾.
The level is displayed in steps of 2dB from –48dB (minimum) to 0dB (maximum).

❻ OFF indicator
This lights when the standby mode is set by turning off the POWER switch.

❼ TEST TONE indicator
This lights when the TEST TONE button is pressed. (RC-178)
Refer to page 10 for details.

❽ DELAY TIME indicator
This lights along with section ❾ when in the surround mode. Use the DELAY button to set the delay time.

DOLBY PRO LOGIC	Displayed in 5msec steps from 15ms to 30ms.
HALL and SIMULATED	Displayed in 5msec steps from 05ms to 30ms.
LIVE	Fixed at 00ms.

❾ Multi display 1
This indicates the delay time, center or rear speaker volume level, on or off setting for the surround mode, etc.

❿ Multi display 2
This indicates the various modes set with different buttons.

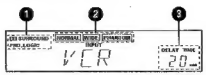
⓫ INPUT indicator
This indicates that the function shown on multi display 2 is being input.

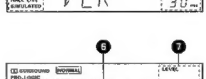
⓬ HALL, SIMULATED and LIVE indicators
These light in the following order when the SURROUND MODE button is pressed:

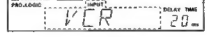
SURROUND PRO LOGIC → HALL → BYPASS → LIVE → SIMULATED

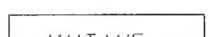
Examples of Multi Function Display Patterns

The displayed modes indicate the opurations performed when the buttons on the front panel of the AVC-77 or on the remote control unit (RC-178) are operated.









1. Surround mode displays

(1) Dolby Pro Logic modes
❶DD/SURROUND PRO LOGIC indicator
↓
Press the DD CENTER MODE button:
❷NORMAL, PHANTOM, or WIDE
❸DELAY TIME
DOLBY PRO LOGIC — Displayed in 5ms steps from 15ms to 30ms.

(2) Other surround modes
• The surround mode is displayed as follows:
❶HALL or SIMULATED — Displayed in 5ms steps from 05ms to 30ms.
LIVE — Fixed at 0ms.

(3) BYPASS indicator
❶Displayed in the bypass mode.

2. Center level display
❶Displayed when CENTER UP or DOWN button is pressed.
❷Displayed in steps of 2dB from –48dB (minimum) to 0dB (maximum).

3. Rear level display
❶Displayed when REAR UP or DOWN button is pressed.
❷Displayed in steps of 2dB from –48dB (minimum) to 0dB (maximum).

4. INPUT indicator
❶The function selected with the input selector buttons is displayed.

5. MUTING display
This appears when the POWER switch is turned on. "MUTING" flashes until the muting circuit turns off.

6. OFF indicator
This appears when the POWER switch is turned off.

9 OPERATION

PREPARATIONS FOR PLAYBACK

1. **Checking connections**
   - Check the connection diagrams (pages 5 to 10), and make sure that all connections are correct.
   - Check that the left and right speaker systems, and like polarities (⊕, ⊖), are matched correctly.
   - Check that the pin plug cords are connected properly, left with left and right with right.
   - Check that all cables are securely plugged in.
   - Check that the cables used are of the correct type.

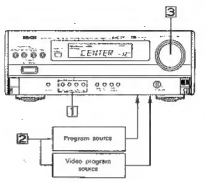
2. **Checking all knob positions**
   (for numbers, see pages 7 to 8.)
   - Put the MASTER VOLUME control knob in the 0 position by turning it as far to the left as it will go.
   - Set the OUTPUT BALANCE control knob in the center positions.

After making these checks, turn on the power by pressing the POWER switch.
The "MUTING" indicator flashes on the LCD, then turns off after several seconds, at which point the set is in the normal operating mode.

Note on operations carried out during playback
If the FUNCTION buttons or other buttons are operated during playback, the sound will be interrupted. This is due to the activation of the muting circuit which prevents the generation of noise during switching. It is not a malfunction.

Protection circuit ("PROTECTION" display lights)
This amplifier has a built-in high-speed protector circuit.
The purpose of this circuit is to prevent the internal circuits being damaged by the large currents which flow through the inner circuitry of the set when output is sent to a partly disconnected or short-circuited speaker terminal.
When the protector circuit is activated, the speaker output is automatically cut off, and the message "PROTECTION" is displayed.
If this should happen, be sure to unplug the amplifier power cord and re-check the speaker connectors before plugging the power cord back in and switching the power back on. If the PROTECTION message is still displayed after you have re-checked, contact your dealer or your local Sales Office or Branch Office.

1. Program source playback



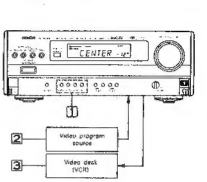
1 Press the desired FUNCTION button. The function for the button which was pressed is indicated on the LCD.

Program source	FUNCTION Button
To watch and listen to the pictures and sound of the video disc player connected to the VDP-1 jacks	VDP-1
To watch and listen to the pictures and sound of the video disc player connected to the VDP-2 jacks	VDP-2
To watch and listen to the pictures and sound of the video cassette recorder connected to the VCR jacks	VCR
To watch and listen to the pictures and sound from the amplifier or receiver equipped with processor loop terminals when the amplifier or receiver equipped with processor loop terminals is connected to the LINE jacks	LINE

2 Start playback of the program source.
For operating instructions, consult the operating instructions for the relevant components.

3 Adjust volume.

2. Recording a video program source or making a video copy
(To record or copy the video source currently monitored)



1 Press the desired FUNCTION button. The function for the button which was pressed is indicated on the LCD.

Video program source	FUNCTION Button
To record from a video disc player connected to the VDP-1 jack	VDP-1
To record from a video disc player connected to the VDP-2 jack	VDP-2
To record the pictures from the amplifier or receiver equipped with processor loop terminals connected to the LINE jacks	LINE

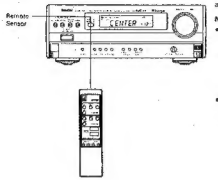
2 Start playback of the desired video program source.

3 Start recording on the video deck.
For instructions, consult the operating instructions of the components concerned.

10 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

■ Range of operation of the remote control unit



Point the remote control unit at the remote control sensor as shown on the diagram at the left.

NOTES:

- The remote control unit can be used from a straight distance of approximately 7 meters, but this distance will shorten or operation will become difficult if there are obstacles between the remote control unit and the remote control sensor, if the remote control sensor is exposed to direct sunlight or other strong light, or if operated from an angle.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

■ Inserting the batteries

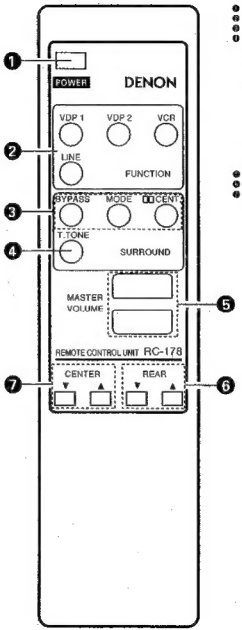
1. Open the bottom cover of the remote control unit and remove the battery cover.

2. Insert the two R6P/AA batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case.
   Close the bottom cover until it clicks shut.

NOTES

- Use only AA, R6P, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.

Button layout



❶ POWER button
❷ FUNCTION button
❸ SURROUND MODE button
❹ TEST TONE button
This button is used to emit test signals for adjusting the level of the different channels in the Dolby Pro Logic Surround mode.
Before playing software recorded in Dolby Pro Logic Surround, position the speakers, then use the test tones to adjust the balance between the volume of the different speakers so that they sound the same.
In the normal and wide modes, the test tones are emitted in the following order:
Front left → Center → Front right → Rear
The test tones are cancelled when this button is pressed again.
❺ MASTER VOLUME button
❻ REAR channel level button
❼ CENTER channel level button

11 SPECIFICATIONS

• Audio section	
Rated maximum output	CENTER (Center 1ch driven)
(All properties shown are	30 W (8 Ω/ohms, 1 kHz with 1.0% THD)
only for the power	REAR (rear 2ch driven)
amplifier stage.)	15 W + 15 W (8 Ω/ohms, 1 kHz with 1.0% THD)
Frequency response	40 Hz to 20 kHz ±3 dB
Rated input/input impedance	150 mV/47 kΩ/ohms
S/N ratio	90 dB
Speaker impedance	Center: 8 Ω/ohms
	Rear: 8 Ω/ohms
LINE input sensitivity/impedance	150 mV/47 kΩ/ohms
• Video section	
Input and output level/impedance	1 Vp-p/75 Ω/ohms
Frequency response	2 Hz to 8 MHz +0, −3 dB
• General	
Power source	AC 230 V, 50 Hz
Power consumption	135 W
Maximum external dimensions	270 (W) × 96 (H) × 313 (D) mm (10-5/8" × 3-25/32" × 12-21/64")
Weight	4.7 kg (10 lbs 6 oz)
• Remote control unit (RC-178)	
Remote control system	Infrared pulse
Number of buttons	15
Power supply	Two DC 1.5V R6P/AA batteries
Maximum external dimensions	48 (W) × 175 (H) × 18 (D) mm (1-57/64" × 6-57/64" × 45/64")
Weight	120g (including batteries) (Approx. 4 oz)

* Maximum dimensions include controls, jacks, and covers.
(W) = width, (H) = height, (D) = depth

* Specifications are subject to change without notice.

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12 TROUBLESHOOTING

Check these points before you conclude that the amplifier has developed a fault.

1. **Are the connections correct?**
2. **Are you operating the equipment correctly, as described in the operating instructions?**
3. **Are the speakers, turntable, CD players or other components connected properly?**

If the unit does not work properly, make the checks described in the table below.
If the fault is not covered in this table, the amplifier has probably developed a fault, and you should switch off the power immediately and contact your dealer or your nearest DENON Service Center or dealership.

	Problem	Cause	Measures	Page
When the problem occurs during CD and tuning PM operation	Although the power has been switched on, the LCD does not light up and no sound is produced.	• Power cord plug is not securely plugged in.	• Check that power cord plug is properly plugged in.	5
	LCD is lit up but no sound is produced.	• Speaker cord is not securely connected. • Input switching button is in wrong position. • Volume adjustment knob is turned all the way down.	• Connect speaker cord securely. • Put switching button in correct position. • Turn volume knob up to a suitable level.	5 7 7
	LCD keeps flashing.	• Speaker jack has short-circuited.	• Turn off power switch, connect speakers securely, then turn power switch back on.	5
	Sound only comes out on one side.	• Speaker cords is not securely connected. • Input and output cords are not securely connected. • Left and right sides are not properly balanced.	• Connect speaker cords securely. • Connect input and output cords securely. • Adjust balance to suitable level using balance control knob.	5 5 7~8
	During stereo playback, the positions of the musical instruments is reversed.	• Left and right speaker cords or left and right input and output cords of components are connected the wrong way round.	• Reverse connections.	5
Wireless control unit	Remote control unit does not function properly when operated.	• Batteries have run down. • Remote control unit is too far away from main unit. • Something is blocking the way between remote controller and the main unit. • You are pressing the wrong button. • The batteries have been inserted with + and − the wrong way round.	• Take out the batteries and replace them with new ones. • Bring the remote control unit nearer to the main unit. • Remove whatever is in the way. • Press the correct button. • Take the batteries out and reinsert them the right way round.	— — — — —
	"PROTECTION" message is displayed on LCD display.	• Speaker cords are not securely connected.	• Turn off power, connect speaker cords securely, and turn power back on.	5

13 LAST FUNCTION MEMORY

• This amplifier has a Last Function Memory which stores the input and output state immediately before the power is switched off.
Because of this function, even when the power has been switched off, the memory is stored for about 3 days, so when the power is switched on again, there is no need to carry out complicated settings again.